

**Notice of Allowability**

Application No.

10/811,579

Examiner

Charles Chow

Applicant(s)

YANG ET AL.

Art Unit

2618

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/24/2007.
2. ☒ The allowed claim(s) is/are 28-48.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application                      |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

### Detailed Action

1. This office action is for amendment received on 5/24/2007.

### Allowable Subject Matter

2. The following is an examiner's statement of reasons for allowance:

Claims 28-48 are allowable over the prior art of record. The prior arts fail to teach the allowable features, singly, particularly, or in combination.

Applicant has canceled claims 1-27 [ pages 7-8 of applicant's amendment 5/24/3007]. Claims 28-40 were indicated to be allowable in the last office action & the newly added dependent claims 41-48 are also allowable due to their dependency upon the allowable independent claims above and the having additional claimed features.

The prior arts fail to teach the **structure of the serially connected double frequency down conversions to VLIF, the low IF tone generator** [ applicant's Fig. 9], & the generating of **DC offset at negative VLIF frequency, -VLIF, & the features for producing a DC offset indication for the base band information, generating a DC offset correction, subtracting the DC offset correction at -VLIF frequency from the base band information signal**, in the independent claims 28, 32, 38.

The dependent claims 29-31, 33-37, 39-40 are also allowable due to their dependency upon the allowable independent claims above and the having additional claimed features.

The closest prior arts Hietala et al. [US 6,597,748 B1] teaches the down conversion from rf signal to VLIF by converter 20, & further down conversion at digital mixer 51 [abstract, Fig. 1, summary of invention], but fails to teach the serially connected down conversion to generate -VLIF with DC offset, for the DC offset correction/cancellation, with indication/subtraction.

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**Riordan et al. [ US 6,240,100 B1]** teaches the digital DC offset prediction 18, retrieved settings from AGC controller 72 [ Fig. 3, col. 6, lines 1-4], the determining of a correction value 74/78 [ Fig. 3 & col. 6, lines 4-30]; the 54, 56 subtracts DC offset correcting values 86/88, to produce corrected base band signal [ Fig. 3 & col. 6, lines 30-53], but fails to teach the serially connected down conversion to generate the -VLIF, for the DC offset correction/cancellation, having the structure as shown in applicant' Fig. 9.

**Khlat et al. [US 6,678,340 B1]** teaches a method having the front end 10 receives rf signal via antenna 12; 20 converts received rf signal to VLIF signal [ col. 5, lines 4-67, Fig. 1 & its description in specification], & 40 converts the digital IF signal to base band [col. 6, lines 1-13 ], but fails to teach the serially connected down conversion to generate the -VLIF for the DC offset correction/cancellation, with indication/subtraction.

Other prior arts in below has been considered, but they fail to teach the above allowable features.

**Rahman [US 7,130,359 B2]** also teaches the VLIF signal at the output of first down converter mixer 54/62, having the features of the DC offset correction 70 [ col. 3, lines 16-48, Fig. 2; the second down converter, mixer 104, col. 4, lines 36-56].

**Brown [US 2004/0146,120 A1]** teaches the VLIF, the near zero intermediate frequency, [ paragraph 0017]; the average detector 441 to average N samples for the entire packets from beginning to end, to remove the DC offset by 461 [paragraph 0023, 0015 & Fig. 3].

Other prior arts are also considered. They are: **Iemura [US 6,442,383B2]**, **Khlat et al. [US 2004/0071,238 A1]**, **Khlat et al. [US 6,678,340 B1]**, **Yan et al. [US 2003/0148,750 A1]**, **Brown [US 2004/0146,120 A1]**, **Stenstrom et al. [US 6,711,393 B1]**, **Riordan et al. [US 6,240,100 B1]**, **Minnis et al. [US 6,954,628 B2]**, **Khlat [US 6,075,409]**, **Rahman et al. [US**

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2002/0151,289 A1], Rahman et al. [US 2006/0222,117A1], Li et al. [US 7,076,225 B2], Severson et al. [US 2003/0100,286 A1], Shi et al. [US 7,136,431 B2].

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles C. Chow whose telephone number is (571) 272-7889. The examiner can normally be reached on 8:00am-5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charles Chow *cc*

June 1, 2007.

  
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